Osteoid osteoma of the rib: A rare presentation and treatment with surgical segmental excision

Pandey S
Associate Professor, College of Medical Sciences, Chitwan

ABSTRACT

Osteoid osteoma is one of the rare benign bone tumors occurring commonly in lower limb long bones either in cortex or medulla. It presents with pain typically more at night and relieved with Aspirin and other NSAIDs. Rib is very rare site of occurrence and there are very few case reports of osteoid osteoma of rib in the literature. We present this case report of Osteoid osteoma of rib arising from shaft of left 6th rib because of its rarity which was successfully treated with marginal excision of the rib segment.

KEYWORDS: Osteoid osteoma; rib; excision

INTRODUCTION

Osteoid Osteoma is relatively rare benign bone tumor comprising of only 3% of primary bone tumors. It was first described by Jaffe in 1935 and is commonly found in lower limb long bones.[1] It can arise from cortex or medulla most commonly in femur and tibia. Rib is very rare site of bone tumors and still rare for the Osteoid osteoma. Pain is the most common symptom which typically aggravates at night and gets relieved with Aspirin or other NSAIDs. The most common age group is 2nd to 3rd decade. There are different treatment methods like marginal excision to local limited excision described with good outcome. There are very few case reports of Osteoid osteoma arising from the rib in the literature. We present a very rare case report of painful, diffuse bony mass arising from 6th rib in 58 year old lady which was treated successfully with marginal excision of the rib segment. Informed consent was taken regarding use of data concerned for publication.

CASE REPORT

A 58 year old lady presented with painful diffuse bony swelling over left chest wall for 12 month. Pain was moderate in intensity, constant and used to aggravate at night and relieved with NSAIDs. There was no history of trauma, fever or any other constitutional symptoms. Chest radiography showed diffuse sclerosis on the 6th rib left side with clear lung field. Haematological and biochemical parameters were normal except ESR 35. CT scan was done to differentiate it from infection or clinical impression of benign tumor. It revealed central nidus with surrounding zone of sclerosis suggestive of Osteoid Osteoma. She was explained about the disease nature, treatment plan and result. She opted for operation with excision of rib segment along with tumor. Under general anaesthesia on lateral position with affected side up, the segment of rib around 4 cm excised along with tumor as identification was easy due to bony swelling of the rib and normal thickness on the adjacent area of rib. On gross inspection, there was central nidus with sclerotic bone around without evidence of pus. Tissue was subjected to histopathological examination and features were consistent with Osteoid Osteoma. Wound healed without any complication and patient became completely pain free till last follow up at 24 months.

DISCUSSION

Osteoid osteoma is benign bone tumor typically <1 cm in size with central nidus and surrounding zone of sclerosis.[2] It may arise from cortex or medulla. Rib is very rare site for bone tumors consisting of about 5-10% of total bone tumors.[2] Common bone tumors in the ribs are multiple myeloma and metastasis. Rib constitutes <1% of all Osteoid osteoma cases.[3] The common age group is 2nd to 3rd decade for osteoid osteoma.[3] Present case in the 5th decade is rare occurrence.

Most of the cases present with pain typically more at night and relieved with NSAIDs and Aspirin. There are few case reports of painless osteoid osteoma also in the literature.[4] X-ray may reveal central radiolucent shadow with surrounding zone of sclerosis but CT scan is the choice of imaging modality.[5-7] The other differential diagnosis of painful lesion in the ribs are Myeloma, Metastasis, Tuberculosis, Eosinophilic granuloma and osteomyelitis.

The aim of treatment is to relieve the pain. The mainstay of treatment is surgical excision if bone is expendable and local curettage to remove the nidus in the nonexpendable bones like long bones of lower limbs and vertebra.[8] There is new modality of treatment with radiofrequency ablation in painful osteoid osteoma particularly at inaccessible sites and is becoming popular where facility is available.[9] In our case, we treated with surgical excision as the part of bone was expendable. There was no residual deficit, local recurrence or any complication. The clinical and radiological diagnosis of Osteoid Osteoma was confirmed with final histopathological examination of the excised tissue.

CONCLUSION

Osteoid Osteoma should be considered as one of the differentials when dealing with painful lesion in the rib despite its very rare site. Complete pain relief can be achieved with resection of the segment of the rib along with the lesion.

Conflict of Interest: None

Fig. 1 Showing fullness over left 6th shaft of rib region A; Chest X ray PA showing diffuse bony thickening of 6th rib on left side B; CT scan chest and bony thorax showing sclerotic bony lesion with central nidus at shaft of the rib

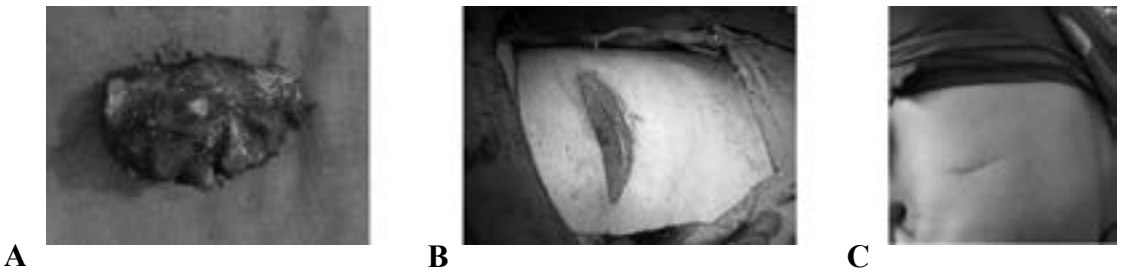

Fig. 2 Showing segmentally resected rib along with tumor A; Intraoperative photograph of the incision and wound size B; clinical photo showing painless healed scare at 24 months of follow up C.

REFERENCES

1. *Dahlin DC, Unni, KK: Bone tumors: General aspects and data on 8,547 cases. 4th Ed. United States: Charles C Thomas Pub. (1986)*
2. *Resnick T KM, Creenway GD: Tumors and tumor-like lesions of bone: imaging and pathology of specific lesions: Diagnosis of bone and joint disorders. 3rd ed. Philadelphia: W.B. Saunders Company, 1995.*
3. *McDermott MB, McEnery K: Painless osteoid osteoma of the rib in an adult. A case report and a review of the literature. Cancer. 1996 Apr 15;77(8):1442-9. doi: 10.1002/(SICI)1097-0142(19960415)77:8<1442::AID-CNCR4>3.0.CO;2-E. PMID: 8608527.*
4. *Unni KK: Osteoid osteoma.Unni KK, ed.Dahlin's Bone Tumors: General Aspects and Data on 11,087 Cases. 5th ed. Philadelphia, PA:Lippincott Raven Publishers; 1996:121-130.*
5. *Kargar AS, Ghasemi A, Binesh F, Heiranizadeh N: Osteoid osteoma of the rib presenting as thoracic outlet syndrome. Ann Thorac Surg. 2013 Dec;96(6):2221-3. doi: 0.1016/j.athoracsur.2013.04.118. PMID: 24296190.*
6. *Touraine S EL, Bisseret D, Genah I, Parlier-Cuau C, Hamze B, Petrover D et al: Is pain duration associated with morphologic changes of osteoid osteomas at CT? Radiology. 2014 Jun;271(3):795-804. doi: 10.1148/radiol.14131629. Epub 2014 Feb 1. PMID: 24495266.*
7. *Veluvolu P, Winkler T, Sajjad SM, Leer RA, Fontanini SM: Osteoid osteoma involving body of right rib. Preoperative localization and postoperative confirmation. Clin Nucl Med. 1992 Nov;17(11):895-6. doi: 10.1097/00003072-199211000-00014. PMID: 1424381.*
8. *Gasbarrini A, Cappuccio M, Bandiera S, Amendola L, van Urk P, Boriani S: Osteoid osteoma of the mobile spine: surgical outcomes in 81 patients. Spine (Phila Pa 1976). 2011 Nov 15;36(24):2089-93. doi: 10.1097/BRS.0b013e3181ffeb5e. PMID: 21304430*
9. *Rehnitz C, Sprengel SD, Lehner B, Ludwig K, Omlor G, Merle C et al: CT-guided radiofrequency ablation of osteoid osteoma and osteoblastoma: clinical success and long-term follow up in 77 patients. Eur J Radiol. 2012 Nov;81(11):3426-34. doi: 10.1016/j.ejrad.2012.04.037. Epub 2012 Jul 6. PMID: 22770580.*

Address for correspondence:

SURESH PANDEY

Associate Professor, College of Medical Sciences, Chitwan

Phone Number: 977- 9845047228

Email: drsuresh.orthonepal@gmail.com